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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,390	04/19/2004	Lee W. Atkinson	200314319-1	4831

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EXAMINER

WANG, ALBERT C

ART UNIT	PAPER NUMBER
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2115

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/828,390

Applicant(s)

ATKINSON, LEE W.

Examiner

Albert Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 23 and 24 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 12-22 is/are rejected.
- 7) ☒ Claim(s) 7-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Original claims 1-24 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 13, 14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Buyuktosunoglu et al., U.S. Pub. No. 2002/00530038 (“Buyuktosunoglu”).

As per claim 1, Buyuktosunoglu teaches a method of conserving power in a computer, comprising:

measuring a processor load (pars. 0026, 0036 & 0037, measuring activity of issue queue within microprocessor, where issue queue activity is related to processor load);

configuring the computer, based on the processor load, so that a lesser amount of speculative execution is enabled when the processor is lightly loaded than is enabled when the processor is heavily loaded (pars. 0020, 0026 & 0027).

As per claim 13, Buyuktosunoglu teaches a computer, comprising:

means for measuring a processor load (par. 0025); and

means for deciding, based on the processor load, whether to enable speculative execution (pars. 0020, 0026 & 0027).

As per claim 14, Buyuktosunoglu teaches means for adjusting the criteria upon which a decision is made whether to enable speculative execution so that a greater amount of speculative execution is enabled when the processor is heavily loaded than is enabled when the processor is less heavily loaded (pars. 0020 & 0025-0027).

As per claim 17, Buyuktosunoglu teaches a computer that configures itself, based on a processor load, so that a lesser amount of speculative execution is enabled when the processor is lightly loaded than is enabled when the processor is heavily loaded (pars. 0020 & 0025-0027).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-6, 12 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buyuktosunoglu as applied to claim 1 above, and further in view of Atkinson, U.S. Patent No. 5,625,826.

As per claims 2 and 18, Buyuktosunoglu does not expressly teach configuring a battery-powered computer. Atkinson teaches that techniques conserving power are especially applicable to battery-powered computers (col. 1, lines 38-52; col. 3, lines 8-14). At the time of the invention, it would have been obvious to one of ordinary skill in the art that Buyuktosunoglu's method may be applied to battery-powered computers, as it is well known in the art to conserve

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the limited charge of a computer's battery, in order to prolong operating time of the computer (Atkinson, col. 3, lines 8-14).

As per claims 3, 5, 6, and 19-22, Atkinson teaches measuring the processor load may alternatively comprise measuring a cache hit rate, measuring the occurrence of memory page misses, and measuring the occurrence of input/output write cycles (col. 2, lines 37-51; col. 6, line 51 – col. 7, line 33).

As per claim 4, Buyuktosunoglu teaches assigning a first value to the processor load in response to a first measurement, and assigning a second value to the processor load, higher than the first, in response to a second measurement, lower than the first (par. 0093).

As per claim 12, Buyuktosunoglu teaches disabling branch prediction when the processor is lightly loaded (pars. 0020 & 0025-0027).

6. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buyuktosunoglu as applied to claim 13 above, and further in view of Krimer et al., U.S. Pub. No. 2004/0003215 ("Krimer").

As per claim 15, Buyuktosunoglu does not expressly teach means for assigning to a branch instruction a confidence level that the branch instruction will result in a taken branch. Because Krimer teaches that confidence estimation is well known in the art for improving branch prediction (pars. 0002-0004), it would have been obvious at the time of the invention to one of ordinary skill in the art to apply confidence estimation to Buyuktosunoglu's method.

As per claim 16, Krimer teaches considering a branch prediction confidence level when deciding whether to enable speculative execution (par. 0016).

Allowable Subject Matter

7. Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 23 and 24 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 571-272-3669. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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